

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
4 March 2004 (04.03.2004)

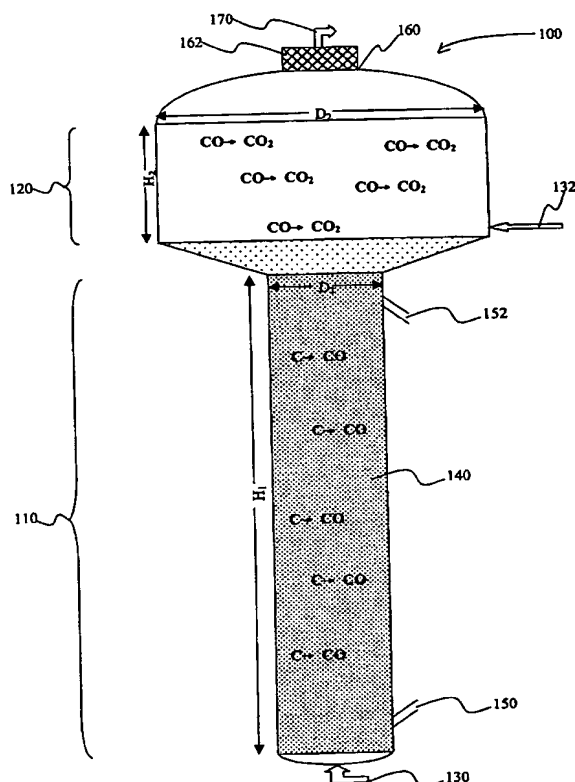
PCT

(10) International Publication Number  
**WO 2004/018092 A1**

- (51) International Patent Classification<sup>7</sup>: **B01J 20/34**
- (21) International Application Number:  
PCT/US2002/026669
- (22) International Filing Date: 21 August 2002 (21.08.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): **FLUOR CORPORATION** [US/US]; One Enterprise Drive, Aliso Viejo, CA 92656 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **CHU, Humbert, Hsi-Shan** [US/US]; Fluor Corporation, 1 Fluor Daniel Dr., Sugarland, TX 77478 (US).
- (74) Agent: **FESSENMAIER, Martin**; Rutan & Tucker, LLP, 611 Anton Blvd., 14th Floor, P.O. Box 1950, Costa Mesa, CA 92626 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,

[Continued on next page]

(54) Title: METHODS AND CONFIGURATIONS FOR CATALYST REGENERATION



(57) Abstract: A catalyst regenerator (100) has a first section (110) and a second section (120) and is operated such that carbon from a carbon-contaminated catalyst (140) is converted to carbon monoxide in the first section (110) and that carbon monoxide is converted to carbon dioxide in the second section (120). The residence time of the oxygen-containing gas in the first and second sections (110, 120) is regulated in preferred configurations by the shape (e.g., diameter) of the first and second sections (110, 120).